Before the Public Service Commission of South Carolina

Docket No. 2022-4-G

Annual Review of Purchased Gas Adjustment and Gas Purchasing Policies of Piedmont Natural Gas Company, Inc.

Testimony & Exhibits of Jeffrey Patton
On Behalf Of
Piedmont Natural Gas Company, Inc.



Testimony of Jeffrey Patton Docket No. 2022-4-G Page 1 of 15

Q. Please state your name and your business address.

- A. My name is Jeffrey Patton. My business address is 4720 Piedmont Row Drive,
 Charlotte, North Carolina 28210.
 - Q. By whom and in what capacity are you employed?
 - A. I am employed by Duke Energy Corporation ("Duke") and work on behalf of Piedmont Natural Gas Company, Inc. ("Piedmont" or the "Company"), a wholly owned subsidiary of Duke, as the Manager of Pipeline Services.
 - Q. Please describe your educational and professional background.
 - A. I graduated from Mississippi State University with a Bachelor of Science Degree in Mechanical Engineering in 1996. In 1998, I graduated from Auburn University with a Master of Business Administration, Finance concentration. I was employed by Southern Company from 1998 to 2003 in various roles in Generation Planning and Development and Energy Marketing. From 2004 to 2005, I was employed by Consolidated Edison as a Senior Rate Analyst. I served as a Senior Business Financial Analyst at Progress Energy from 2005 to mid-2008 and was responsible for wholesale electric revenue forecasting. From mid-2008 to early 2019, I was an Originator in the Fuels & Systems Optimization Department for Progress Energy (which merged with Duke), and I was responsible for the procurement of natural gas supply, transportation, and storage services for Duke's natural gas-fired power generation facilities. In February 2019, I accepted the position of Manager of Pipeline Services.

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 2 of 15

Q.	Please describe	the scope of	your	present res	ponsibilities.
----	-----------------	--------------	------	-------------	----------------

- A. My current responsibilities include the supervision of pipeline capacity planning and relations, annual design day and daily forecasting for Piedmont. In addition, I am responsible for oversight of activities at the Federal Energy Regulatory Commission ("FERC") regarding interstate pipelines and storage facilities that the Company utilizes for transportation and storage services.
- Q. Have you previously testified before the Public Service Commission of South Carolina ("Commission") or any other regulatory authority?
- A. Yes. I have testified before this Commission and the North Carolina Utilities

 Commission in Piedmont's previous Annual Review of Gas Costs proceedings.
- Q. What is the Review Period in this docket?
- 12 A. The Review Period is April 1, 2021, through March 31, 2022.
 - Q. What is the purpose of your testimony in this proceeding?
 - A. The purpose of my testimony is to discuss the market requirements of Piedmont's South Carolina customers for the Review Period. My testimony is also forward-looking, discussing how Piedmont plans to satisfy the evolving market requirements of its South Carolina customers in the future. Specifically, my testimony will discuss how Piedmont projects changes in customer demand in those markets as part of its planning process, the capacity acquisition policies and practices the Company employs to serve those markets, and the efforts undertaken by Piedmont at the FERC on behalf of its customers to ensure that interstate transportation and storage services are reasonably priced.

Q. As background, please give a general description of Piedmont and its market in South Carolina.

A. Piedmont is a local distribution company principally engaged in the purchase, distribution, and sale of natural gas to more than 1.1 million customers in South Carolina, North Carolina, and the metropolitan area of Nashville, Tennessee. Piedmont currently serves approximately 158,500 customers in its South Carolina service territory, which encompasses areas within Anderson, Greenville, Spartanburg, and Cherokee counties. During the Review Period, Piedmont delivered 68,646,254 dekatherms ("dts") of natural gas to its South Carolina customers. Most of Piedmont's customers are residential, who directly use natural gas in their home primarily for space heating and water heating needs. Piedmont also serves non-residential customers, mainly commercial and industrial entities, and power generators.

For purposes of the market requirements planning that I discuss later in my testimony, it is important to conceptualize Piedmont's provision of regulated natural gas service to its customers into two distinct markets: the firm market (principally serving residential, small commercial, and small industrial customers as well as power generators), and the interruptible market (principally large commercial and industrial customers). Although Piedmont competes with electricity for the attachment of firm customers, once attached residential and small commercial/industrial customers generally have no readily available alternative source of energy and depend on natural gas for their basic space

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 4 of 15

heating or utility needs. During the Review Period, 64,645,400 dts, or approximately 94% of Piedmont's South Carolina deliveries, were to the firm market.

In the interruptible market, Piedmont competes on a month-to-month and day-to-day basis with alternative sources of energy, primarily fuel oil or propane and, to a lesser extent, coal or wood. These larger commercial and industrial customers will buy alternate fuels when they are less expensive than natural gas. During the Review Period, 4,000,855 dts, or approximately 6% of Piedmont's South Carolina deliveries, were to the interruptible market.

Both the firm market and the interruptible market can be further bifurcated into two categories of service: sales service and transportation service. The regulated natural gas service provided by Piedmont to its South Carolina customers under each of its Commission-approved Rate Schedules is delineated as either firm service or interruptible service and is further characterized as either sales service or transportation service. Therefore, there are four major categories of the market requirements for Piedmont's customers: firm sales service, firm transportation service, interruptible sales service, and interruptible transportation service.

Q. Do the market requirements of Piedmont's South Carolina customers change from year-to-year?

A. Yes. The market requirements of Piedmont's South Carolina customers continue to increase year-to-year because Piedmont's customer base in South Carolina

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 5 of 15

continues to grow. Such growth is most robust in the residential sector. As mentioned above, Piedmont currently serves approximately 158,500 customers in South Carolina. One year ago, as mentioned in my testimony last year, Piedmont had about 155,000 customers in South Carolina. Therefore, understanding and projecting customer growth is an important component of the planning Piedmont undertakes to ensure it will be able to satisfy the market requirements of its South Carolina customers. Absent the incorporation of customer growth in its planning process, Piedmont would be unable to ensure the reliable provision of firm natural gas service to its firm sales customers, most critically in the winter season.

Q. How does Piedmont develop its customer growth projections?

- A. Piedmont reviews historical customer additions, holds discussions with various business leaders/trade allies and field sales employees, and considers forecasts of local, regional and national business drivers (i.e., economic conditions, demographics, etc.) to derive projections of the change in its customer count over time. Presently, Piedmont anticipates that its overall customer base in South Carolina will continue to steadily increase largely due to the positive regional and local economic outlook continuing to support the pace of new residential building
- Q. In its planning to satisfy customer requirements during the Review Period, how did the Company calculate its Design Day requirements for Winter 2021 2022?

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 6 of 15

Piedmont's Design Day calculations for Winter 2021 – 2022 were performed using the same methodology as described in my testimony for last year's Annual Review proceeding. In summary, Piedmont performed linear regression analysis of its most recent customer data (actual customer sendout data from November 2016 through March 2021 for all customer classes) so as to update its understanding of how our customers use natural gas for base load purposes and in response to weather (i.e., usage per heating degree day ("HDD")). Piedmont then adjoined that customer usage update with its customer growth projection for Winter 2021 – 2022, inclusive of a five percent (5%) reserve margin, in order to arrive at its Design Day requirements for Winter 2021 – 2022. I explain the need for such a reserve margin in the Company's Design Day requirements planning later in my testimony. Finally, the Company also reviewed its historic temperature data. From that review, Piedmont determined that an update of Design Day temperature from 8.71 to 8.69 degrees Fahrenheit was warranted. The update in Design Day temperature comports with a change in Design Day HDD from 56.29 HDD to 56.31 HDD. This modification to the Design Day HDD was warranted due to the allocation of weather station percentages based on the current customer service areas.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

A.

Q. Does Piedmont believe that energy conservation measures utilized by customers are applicable when formulating Design Day requirements?

A. Based on observable customer usage patterns, Piedmont believes that energy conservation measures are generally being utilized by our customers, but

Piedmont has not seen evidence that conservation or reduced usage is occurring during Design Day conditions, or during extended cold weather snaps in winter. For example, during the winter of 2017 – 2018, a particularly cold weather event occurred which gave Piedmont an opportunity to refresh its data and analyze customers' behavior during extremely cold weather. As in the past, the Company continued to observe that customers tend to conserve for the first few days of colder temperatures, but then turn up the thermostat in response to the colder temperatures. Thereafter, once adjusted to a warmer setting, customers appear to become less focused on conservation and more focused on comfort and leave the thermostat at the warmer level for a few days even as temperatures start to moderate. This pattern is illustrated in **Exhibit (JCP-3)**. Given what Piedmont experienced in the winter of 2017 – 2018 and its observation of how customers respond to colder temperatures in this pattern, the Company is confident that a conservative approach to Design Day forecasting is the most prudent approach. Piedmont continues to focus on being able to fully and reliably serve its firm sales customers on a Design Day.

- Q. What were the Design Day demand requirements used by the Company for planning purposes during the Review Period, the number of HDDs, dts per HDD, customer growth rates and supporting calculations used to determine the Design Day requirement?
- A. Please see Exhibits_(JCP-4A, 4B and 4C).

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 8 of 15

1	Q.	What was the estimated base load demand requirement of the firm markets
2		for the Review Period?
3	A.	Please see Exhibit_(JCP-4A).
4	Q.	Does the Company plan for a reserve margin to accommodate statistical
5		anomalies, unanticipated supply or capacity interruptions, force majeure,
6		emergency gas usage or colder-than-design day weather?
7	A.	Yes. The Company computes a five percent (5%) reserve margin and arranges
8		for supply and capacity to provide delivery of the reserve margin for events such
9		as those listed above. This reserve margin is reflected in Exhibit_(JCP-4C) and
10		Exhibit_(JCP-5C).
11	Q.	In its planning to satisfy customer requirements during the Review Period,
12		how did the Company calculate its requirements for days other than Design
13		Day during Winter 2021 – 2022?
14	A.	Piedmont constructed a load duration curve to forecast the Company's firm sales
15		market requirements for design winter weather conditions. The supply
16		requirements were plotted in descending order of magnitude, with existing
17		pipeline capacity and storage resources overlaid to expose any supply shortfalls.
18		The load duration curve for the Winter 2021 - 2022, as forecasted in the
19		immediate planning for Winter 2021 – 2022, is shown in Exhibit_(JCP-1A) .
20		For ease of comparison, I plotted the actual Winter 2021 – 2022 experience in
21		Exhibit_(JCP-1B).

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 9 of 15

1	Q.	Did the Company appropriately plan for satisfying its customer
2		requirements for the Review Period including Winter 2021 – 2022?
3	A.	Yes. I note that Piedmont fully and reliably satisfied the firm sales requirements
4		of its South Carolina customers during the Review Period.
5		Design Day and Winter Season Planning for Future Periods:
6		<u>Winter 2022 – 2023 through Winter 2026 – 2027</u>
7	Q.	Has the Company made any changes to its calculation of Design Day
8		requirements for the future?
9	A.	No. The Company is utilizing the same methodology as described above,
10		refreshed to include actual customer sendout data from Winter 2021 – 2022 for
11		the calculation of the Design Day requirement to be effective with this coming
12		winter — Winter 2022 - 2023. Additionally, the Company also reviewed its
13		historic temperature data. From that review, Piedmont determined that an update
14		of Design Day temperature from 8.69 to 8.71 degrees Fahrenheit was warranted.
15		The update in Design Day temperature comports with a change in Design Day
16		HDD from 56.31 HDD to 56.29 HDD. This modification to the Design Day
17		HDD was warranted due to the allocation of weather station percentages based
18		on the current customer service areas. This Design Day temperature is reflected
19		in Exhibit_(JCP-7).
20	Q.	What are the newly forecasted Design Day demand requirements used by
21		the Company for planning purposes for the upcoming winter (Winter 2022

- 2023) and for the next four winter seasons, the amount of HDDs, dts per

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 10 of 15

1		HDD, customer growth rates and supporting calculations used to determine
2		the Design Day requirement amounts?
3	A.	Please see Exhibits_(JCP-5A, 5B, and 5C).
4	Q.	What are the newly forecasted base load demand requirements for the
5		upcoming winter and the next four winter seasons?
6	A.	Please see Exhibit_(JCP-5A).
7	Q.	How has the Company calculated its requirements for days other than
8		Design Day for the coming winter season (Winter 2022 – 2023)?
9	A.	Piedmont employed the same process used to develop its forecasted load
10		duration curve for Winter 2022 – 2023, as described earlier in my testimony.
11		The current load projection for this coming winter (Winter 2022 - 2023) is
12		shown in Exhibit_(JCP-2) .
13		Supply & Capacity Planning to Satisfy Customer Demand
14	Q.	Is it possible to always maintain capacity rights that exactly match
15		Piedmont's calculated Design Day demand, plus a reserve margin?
16	A.	No. Capacity additions are acquired in "blocks" of additional transportation,
17		storage, or liquified natural gas ("LNG") capacity as current and future needs
18		are identified to ensure Piedmont's ability to serve its customers based on the
19		options available at that time. As a practical matter, this means that at any given
20		moment in time, Piedmont's actual capacity assets will vary somewhat from its
21		forecasted demand capacity requirements. This aspect of capacity planning is
22		unavoidable but Piedmont attempts to mitigate the impact of any mismatch

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 11 of 15

through its use of bridging services, capacity release, and off-system sales activities.

Q. What process does Piedmont undertake to acquire firm capacity to meet its growing firm sales market requirements?

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

- A. Piedmont secures incremental capacity to meet the growth requirements of its firm sales customers consistent with its "best cost" policy, as described in the testimony of Company witness Todd Breece. To implement this policy, Piedmont attempts to contract for timely and cost-effective capacity that is tailored to the demand characteristics of its market. Piedmont evaluates interstate pipeline capacity and storage offerings expected to be available at the time that it is determined that additional future firm delivery service is required, or prior to the expiration of existing firm delivery service contracts. The Company attempts to match the days of service of new incremental transportation capacity to the duration of its incremental demand on the most economical basis possible. Piedmont also seeks to acquire peaking services to meet projected peak day demand, storage services to meet projected seasonal demand, and year-round firm transportation services to meet base load demand and to provide available capacity for storage inventory replenishment. However, service choices are limited to those offered during the time period being evaluated.
- Q. Please describe how the Company plans to satisfy its firm sales requirements for the next five winter seasons.

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 12 of 15

A. Based on the current projections of its firm sales demand, Piedmont believes that it has sufficient supply and capacity rights to meet its customer needs for the upcoming winter season. Piedmont owns and operates three on-system LNG peaking facilities in the Carolinas, with the newest LNG facility – the Robeson LNG facility – placed into service in late August 2021. Piedmont increased the Design Day output of its Bentonville LNG peaking facility from 90,000 dts per day to 110,000 dts per day beginning in the Winter 2021 – 2022 season, and the new Robeson LNG facility currently provides 200,000 dts per day of peaking supply of natural gas.

- Q. Please discuss Piedmont's plans to satisfy requirements that would have been met by the Atlantic Coast Pipeline ("ACP") Project.
- A. Piedmont had contracted for 160,000 dts per day of firm pipeline service on the ACP Project to provide additional upstream capacity, supply access, and infrastructure. Following the cancellation of the ACP Project in July 2020, Piedmont evaluated interstate pipeline alternatives to serve future demand combined with system infrastructure requirements that would have been met by ACP. In the summer of 2021, Piedmont entered into a confidential, binding precedent agreement with Transcontinental Gas Pipe Line Company, LLC ("Transco") to secure additional incremental firm pipeline service via Transco's Southside Reliability Enhancement ("SRE") Project that is targeted to be placed in-service on December 1, 2024. The SRE Project will provide Piedmont with 160,000 dts per day of incremental firm pipeline service via Transco's South

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 13 of 15

Virginia Lateral ("SVL path") to delivery points in Piedmont's eastern North Carolina service territory. The SVL path provides redelivery of natural gas supply from the interconnect of Transco's mainline in Zone 5 and the South Virginia Lateral at Station 165. Piedmont anticipates utilizing existing upstream contractual transportation and storage arrangements to access upstream non-Transco Zone 5 priced supply to deliver into the SVL path, as reflected on Exhibit_(JCP 5C). Additionally, the SRE Project will provide a separate firm pipeline service path of 263,400 dts per day from Transco's interconnect with Pine Needle LNG to Piedmont's Iredell meter ("Iredell path") located in Iredell County, North Carolina. Piedmont has an existing contract with Pine Needle LNG for 263,400 dts per day and has been utilizing Piedmont's existing Transco transportation contracts on a secondary firm basis to deliver supply from Pine Needle to Iredell. Secondary deliveries may no longer be reliable to deliver Pine Needle volumes under some operating conditions due to changes on the Transco system. This has required Piedmont to seek primary firm capacity rights to deliver these Pine Needle volumes to its citygate.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

- Q. Has the Company made any changes to its capacity rights during the Review Period?
- A. The Company did not make any changes to its capacity rights during the Review Period.

Testimony of Jeffrey Patton Docket No. 2022-4-G Page 14 of 15

- Q. Please describe the Company's interest and position on any issues before the FERC that may have an impact on the Company's operations and a description of the status of each proceeding described.
 - A. The Company routinely intervenes and participates in interstate natural gas pipeline proceedings before the FERC. A current summary of the proceedings in which Piedmont is a party is included in **Exhibit_(JCP-6)**.
 - Q. Does this conclude your testimony?
- 8 A. Yes, it does.

4

5

6

Piedmont Natural Gas Company, Inc. Docket No. 2022-4-G

Index - JCP Exhibits

Description
Winter 2021 – 2022 Forecast Load Duration Curve
Winter 2021 – 2022 Actual Load Duration Curve
Winter 2022 – 2023 Forecast Load Duration Curve
2018 Weather Events
Winter 2021 – 2022 Design Day Start Point
Customer Growth – Actual and Projection for 2021 – 2022 planning
Winter 2021 – 2022 Design Day Demand & Supply Schedule
Winter 2022 – 2023 Design Day Start Point
Customer Growth – Actual and Projection for 2022-2023 planning
Winter 2022-2023 Design Day Demand & Supply Schedule
FERC Filing Activity April 1, 2021 – March 31, 2022
Design Day Temperature

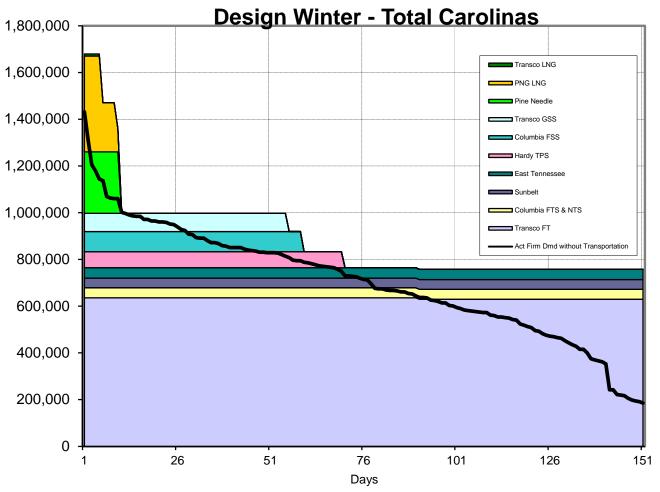
Exhibit___(JCP-1A)

Piedmont Natural Gas

Exhibit_(JCP-1A)

Docket No. 2022-4-G

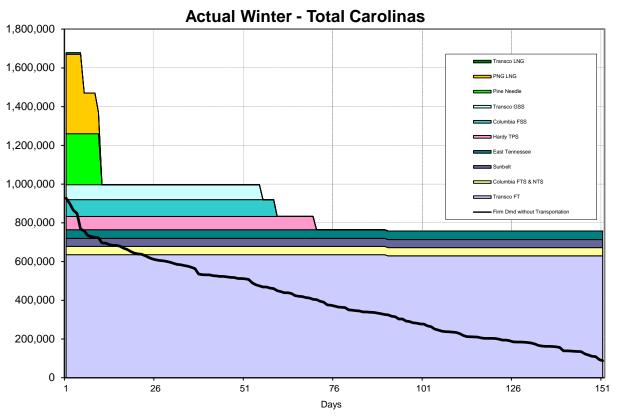




Exhibit___(JCP-1B)

Piedmont Natural Gas Winter 2021 - 2022 Exhibit_(JCP-1B) Docket No. 2022-4-G





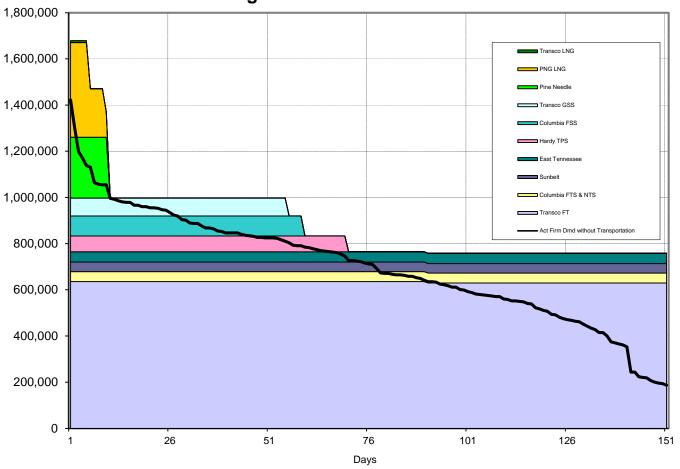
Exhibit___(JCP-2)

Piedmont Natural Gas

Docket No. 2022-4-G

Exhibit_(JCP-2)

Winter 2022 - 2023 FS Load Duration Curve Design Winter - Total Carolinas



Exhibit___(JCP-3)

2017-2018 Weather Event

Carolinas: December 2017 - January 2018 Cold Snap

	Firm Sales & Firm		
	Transportation		Usage per HDD
Date	Less Base Load	HDDs	Less Base Load
12/30/2017	530,098	28.2	18,798
12/31/2017	836,623	41.3	20,257
1/1/2018	975,969	46.2	21,125
1/2/2018	1,011,608	42.0	24,086
1/3/2018	972,138	39.3	24,736
1/4/2018	1,037,719	44.5	23,320
1/5/2018	1,011,070	42.8	23,623
1/6/2018	1,015,633	44.8	22,670
1/7/2018	964,821	40.5	23,823
1/8/2018	714,357	27.8	25,696

All usage is in dekatherms.

Base load equals 164,485 dekatherms.

Exhibit___(JCP-4A)

Piedmont Natural Gas Exhibit_(JCP-4A)

Docket No. 2022-4-G

Winter 2021 - 2022 Design Day Start Point

Design Day Forecast 2021 - 2022	Total Carolinas
Baseload - Firm Sales	122,316.59
Design Day Temperature	8.69
Design Day HDD	56.31
Estimated increase in Firm Sales Usage per degree day	21,541.56
Total Firm Sales usage for total E6 21 HDDs	1 225 222
Total Firm Sales usage for total 56.31 HDDs	1,335,322
Projected Net Growth Rate	1.529%
System Design Day Firm Sendout 2021 - 2022	1,355,743
TOTAL NEW FIRM SALES PICKED UP MID YEAR & ANNUAL ELECTIONS	886
TOTAL FIRM SALES MOVED TO TRANSPORT ANNUAL ELECTIONS	(574)
TOTAL NET NUMBER - FIRM SALES PICKED UP	312
Firm Sales Contract Commitment - GE	333
Firm Sales Contract Commitment - City of Wilson	3,900
Firm Sales Contract Commitment - City of Rocky Mount	3,000
Total Firm Sales Contract Commitment	7,233

Exhibit___(JCP-4B)

Piedmont Natural Gas Exhibit__(JCP - 4B)

Docket No. 2022-4-G Customer Growth for Winter Design Day 2021-2022

Actual Customer Count by Year as of March 31 Through 2021 Projected Customer Count by Year as of March 31, 2022 Through 2024

		TOTAL RESIDENTIAL & COMMERCIAL CUSTOMER COUNT									
		ACTUAL								PROJECTION	
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	2021	2022	<u>2023</u>	2024
Total NC & SC	839,328	852,754	865,950	876,464	891,191	901,513	915,099	936,163	950,767	965,979	981,725
	1.49%	1.60%	1.55%	1.21%	1.68%	1.16%	1.51%	2.30%	1.53%	1.56%	1.60%

Exhibit___(JCP-4C)

Piedmont Natural Gas Exhibit_(JCP-4C)

Docket No. 2022-4-G

Carolinas Design Day Demand & Supply Schedule - Winter 2021 - 2022

Design Day Temperature of 8.69 Degrees (56.31 HDDs)

(All Values in Dt/d)	Carolinas Demand Net Gr	owth Rate	1.53%	1.56%	1.60%	1.63%	1.67%
DEMAND	Winte	er Period:	2021 - 22	2022 - 23	2023 - 24	2024 - 25	2025 - 26
System Design Day Firm Sendout			1,355,743	1,377,216	1,399,196	1,421,982	1,445,68
Mid Year Firm Sales Pick Up			886				
Mid Year Firm Sales Deduct (move			<u>(574)</u>				
	Subtotal Sendout plus Mid Ye	ear Pickup	1,356,055	1,377,216	1,399,196	1,421,982	1,445,68
Special Contract Firm Sales Commit	ment		7,233	7,233	7,233	7,233	7,233
Total Firm Design Day Demand			1,363,288	1,384,449	1,406,429	1,429,215	1,452,91
Reserve Margin on Design Day Dem	and (5%)		68,164	69,222	70,321	71,461	72,646
Total Firm Sales Demand			1,431,452	1,453,671	1,476,751	1,500,676	1,525,559
SUPPLY CAPACITY							
Firm Transportation		Days					
Transco	FT	365	301,016	301,016	301,016	301,016	301,016
Transco	FT	365	6,440	6,440	6,440	6,440	6,440
Transco	FT SE '94/95/96	365	129,485	129,485	129,485	129,485	129,48
Transco	Sunbelt	365	41,400	41,400	41,400	41,400	41,400
Transco	VA Southside	365	20,000	20,000	20,000	20,000	20,00
Transco	Leidy	365	100,000	100,000	100,000	100,000	100,00
Columbia Gas	FTS	365	9,801	9,801	9,801	9,801	9,80
Columbia Gas	FTS	365	23,000	23,000	23,000	23,000	23,000
Columbia Gas	NTS	365	10,000	10,000	10,000	10,000	10,000
East TN (MGT Upstream)	FT	365	19,578	19,578	19,578	19,578	19,578
Total Year Round FT	•		660.720	660.720	660.720	660.720	660.720
Transco	FT Southern Expansion	151	72,502	72,502	72,502	72,502	72,502
East TN (TETCO Upstream)	FT	151 ¹	24,798	24,798	24,798	24,798	24,79
Transco	FT	90	6,314	6,314	6,314	6,314	6,314
Total Winter Only FT	•		103,614	103,614	103,614	103,614	103,614
Firm Transportation Subtota	1		764,334	764,334	764,334	764,334	764,334
Tim Transportation Gubtotal			704,334	704,334	704,334	704,334	704,55
Hardy Storage	HSS	70	68,835	68,835	68,835	68,835	68,83
Dominion	GSS	60 ²	0	0	0	0	(
Columbia Gas	FSS/SST	59	86,368	86,368	86,368	86,368	86,368
Transco	GSS	55	77,475	77,475	<u>77,475</u>	<u>77,475</u>	77,47
Total Seasonal Storage			232,678	232,678	232,678	232,678	232,678
Peaking Capacity	,						
Piedmont	LNG - Huntersville	10	100,000	100,000	100,000	100,000	100,00
Piedmont	LNG - Bentonville	9	110,000	110,000	110,000	110,000	110,00
Transco	Pine Needle	10	263,400	263,400	263,400	263,400	263,40
Transco	LNG (formerly LG-A)	5	8,643	8,643	8,643	8,643	8,64
Piedmont	LNG - Robeson	5 3	200,000	200,000	200,000	200,000	200,00
Peaking Supplies Total			682,043	682,043	682,043	682,043	682,04
Total Capacity			1,679,055	1,679,055	1,679,055	1,679,055	1,679,05
. ca. capaony					, ,		
			247,603	225,384	202,304	178,379	153,496

¹ East TN capacity is 365 days, however the upstream TETCO capacity delivering to East TN is 151 days

²Beginning in FY2015, Dominion capacity removed as available capacity on design day due to non-firm backhaul from Transco Zone 6.

³ The Robeson LNG facility is anticipated to be completed in the summer of 2021, and therefore is forecasted to provide peaking support starting winter 2021-2022. The capacity portfolio for the 2021-2022 winter season and beyond will be restructured to include Robeson LNG using the "best cost" gas purchasing policy while considering the customer load profile and future requirements that would have been met by the Atlantic Coast Pipeline.

Exhibit___(JCP-5A)

Piedmont Natural Gas Exhibit_(JCP-5A)

Docket No. 2022-4-G

Winter 2022 - 2023 Design Day Start Point

Design Day Forecast 2022 - 2023	Total Carolinas
Baseload - Firm Sales	124,483.50
Design Day Temperature	8.71
Design Day HDD	56.29
Estimated increase in Firm Sales Usage per degree day	21,355.56
Total Firm Sales usage for total 56.31 HDDs	1,326,588
Projected Net Growth Rate	1.72%
System Design Day Firm Sendout 2021 - 2022	1,349,408
TOTAL NEW FIRM SALES PICKED UP MID YEAR & ANNUAL ELECTIONS	1,379
TOTAL FIRM SALES MOVED TO TRANSPORT ANNUAL ELECTIONS	(3,776)
TOTAL NET NUMBER - FIRM SALES PICKED UP	(2,396)
Firm Sales Contract Commitment - GE	333
Firm Sales Contract Commitment - City of Wilson	3,900
Firm Sales Contract Commitment - City of Rocky Mount	3,000
Total Firm Sales Contract Commitment	7,233

Exhibit___(JCP-5B)

Exhibit_(JCP-5B)

Piedmont Natural Gas

Docket No. 2022-4-G

Customer Growth for Winter Design Day 2022-2023

Actual Customer Count by Year as of March 31 Through 2022 Projected Customer Count by Year as of March 31 Through 2025

TOTAL RESIDENTIAL & COMMERCIAL CUSTOMER COUNT

		ACTUAL						PROJECTION			
	<u>2015</u>	<u>2016</u>	<u>2017</u>	2018	<u>2019</u>	2020	<u>2021</u>	2022	<u>2023</u>	<u>2024</u>	<u>2025</u>
Total NC & SC	852,754	865,950	876,464	891,191	901,513	915,099	936,163	951,458	967,825	984,873	1,002,573
	1.60%	1.55%	1.21%	1.68%	1.16%	1.51%	2.30%	1.63%	1.72%	1.76%	1.80%

Exhibit___(JCP-5C)

Piedmont Natural Gas Exhibit_(JCP-SC)

Docket No. 2022-4-G

Carolinas Design Day Demand & Supply Schedule - Winter 2022 - 2023

Design Day Temperature of 8.71 Degrees (56.29 HDDs)

(All Values in Dt/d)	Carolinas Demand Net	Growth Rate		1.7202%	1.7615%	1.7972%	1.8325%	1.8325%
DEMAND	Win	ter Period:		2022 - 23	2023 - 24	2024 - 25	2025 - 26	2026 - 27
System Design Day Firm Sendout				1,349,408	1,370,739	1,395,374	1,420,944	1,446,983
Mid Year Firm Sales Pick Up				1,379				
Mid Year Firm Sales Deduct (move to Firm Tra	nsport)			(3,776)				
	Subtotal Sendout plus Mid '	rear Pickup		1,347,011	1,370,739	1,395,374	1,420,944	1,446,983
Special Contract Firm Sales Commitment				7,233	7,233	7,233	7,233	7,233
Total Firm Design Day Demand				1,354,244	1,377,972	1,402,607	1,428,177	1,454,216
Reserve Margin on Design Day Demand (5%)				67,712	68,899	70,130	71,409	72,711
Total Firm Sales Demand				1,421,957	1,446,871	1,472,737	1,499,586	1,526,927
								, ,
SUPPLY CAPACITY								
Firm Transportation	Type of Contract	<u>Days</u>						
Transco	FT	365		301,016	301,016	301,016	301,016	301,016
Transco	FT	365		6,440	6,440	6,440	6,440	6,440
Transco	FT SE '94/95/96	365		129,485	129,485	129,485	129,485	129,485
Transco	Sunbelt	365		41,400	41,400	41,400	41,400	41,400
Transco	VA Southside	365		20,000	20,000	20,000	20,000	20,000
Transco	Leidy	365		100,000	100,000	100,000	100,000	100,000
Columbia Gas	FTS	365		9,801	9,801	9,801	9,801	9,801
Transco SRE (Columbia Gas Upstream)	FTS	365	4	23,000	23,000	23,000	23,000	23,000
Columbia Gas	NTS	365		10,000	10,000	10,000	10,000	10,000
Transco SRE (East TN & MGT & Upstream)	FT	365	4	19,578	19,578	19,578	19,578	19,578
Total Year Round F	Τ			<u>660,720</u>	<u>660,720</u>	660,720	660,720	660,720
Transco	FT Southern Expansion	151		72,502	72,502	72,502	72,502	72,502
Transco SRE (East TN & TETCO Upstream)	FT		1,4	24,798	24,798	24,798	24,798	24,798
Transco	FT	90		6,314	6,314	6,314	6,314	6,314
Total Winter Only F	Τ			103,614	103,614	103,614	103,614	103,614
Firm Transportation Subtota	nl			764,334	764,334	764,334	764,334	764,334
Transco SRE (Hardy Storage Upstream)	HSS	70	4	68,835	68,835	68,835	68,835	68,835
Dominion	GSS	60		00,033	00,033	00,033	00,033	00,033
Transco SRE (Columbia Gas Upstream)	FSS/SST	59		86,368	86,368	86,368	86,368	86,368
Transco	GSS	55		77,475	77,475	77,475	77,475	77,475
Transco	000	33		11,415	11,415	11,415	11,415	11,413
Total Seasonal Storage				232,678	232,678	232,678	232,678	232,678
Peaking Capacit	/							
Piedmont	LNG - Huntersville	10		100,000	100,000	100,000	100,000	100,000
Piedmont	LNG - Bentonville	9		110,000	110,000	110,000	110,000	110,000
Transco	Pine Needle	10	4	263,400	263,400	263,400	263,400	263,400
Transco	LNG (formerly LG-A)	5		8,643	8,643	8,643	8,643	8,643
Piedmont	LNG - Robeson	5	3	200,000	200,000	200,000	200,000	200,000
Peaking Supplies Tota	n/			682,043	682,043	682,043	682,043	682,043
Total Capacity				1,679,055	1,679,055	1,679,055	1,679,055	1,679,055
				257,098	232,184	206,318	179,469	152,128

¹ East TN capacity is 365 days, however the upstream TETCO capacity delivering to East TN is 151 days

² Beginning in FY2015, Dominion capacity removed as available capacity on design day due to non-firm backhaul from Transco Zone 6.

³ During the Review Period, construction of the Robeson LNG plant was completed, and it was placed in service in August 2021.

⁴ Transco SRE project has a target in-service date of December 1, 2024. This project will provide deliverability of 160,000 Dth per day (365 days) from Transco's South VA Lateral with upstream supply from existing non-Transco Zone 5 priced supply contracts (TCO 23,000, ENT/MGT 19,578, ETN/TETCO 24,798, TCO/FSS 81,169 and Hardy 11,455). The project will also provide a firm path of 263,400 Dth per day from Pine Needle LNG to Piedmont's citygate in Iredell County, NC.

Exhibit___(JCP-6)

FERC Filing Activity: April 1, 2021 – March 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP21-681-000	Pine Needle LNG Company, LLC	3/31/2021	Intervened on 4/12/2021	2021 Annual Fuel and Electric Power Tracker Filing	On 4/16/2021, the Commission issued a letter order accepting the filing.
RP21-686-000	Transcontinental Gas Pipe Line Company, LLC	3/31/2021	Intervened on 4/12/2021	Crediting of Reservation Charges – Rate Schedules GSS, S-2, LNG, and LG-A	On 6/21/2021, the Commission issued a letter order accepting the filing.
RP21-687-000	Columbia Gas Transmission, LLC	3/31/2021	Intervened on 4/12/2021	Operational Transaction Rate Adjustment Summer 2021	On 2/25/2022, the Commission issued an order approving a settlement agreement that included Columbia Gas' filing in Docket No. RP21-687.
RP21-697-000	East Tennessee Natural Gas, LLC	3/31/2021	Intervened on 4/12/2021	2019-2020 Cashout Report	On 7/21/2021, the Commission issued a letter order accepting the filing.

RP21-728-000	Columbia Gas Transmission, LLC	4/8/2021	Intervened on 4/13/2021	Petition for Limited Waivers Regarding Capacity Release, Right of First Refusal and Shipper-Must-Have-Title Rules, the Prohibition on Buy-Sell Arrangements, and the Prohibition Against Tying Arrangements	On 6/02/2021, the Commission issued an order denying Columbia Gas' request for waivers. This docket was consolidated with Docket Nos. RP21- 727-000 and RP21-728-000.
RP21-729-000	Columbia Gas Transmission, LLC	4/8/2021	Intervened on 4/13/2021	Petition for Limited Waivers Regarding Capacity Release, Right of First Refusal and Shipper-Must-Have-Title Rules, the Prohibition on Buy-Sell Arrangements, and the Prohibition Against Tying Arrangements	On 6/02/2021, the Commission issued an order denying Columbia Gas' request for waivers. This docket was consolidated with Docket Nos. RP21- 727-000 and RP21-728-000.
CP21-94-000	Transcontinental Gas Pipe Line Company, LLC	3/26/2021	Intervened on 4/30/21	Application for a Certificate of Public Convenience and Necessity – Regional Energy Access Expansion Project	Multiple motions to intervene and comments have been filed. The proceeding is ongoing.
RP21-552-000	Tennessee Gas Pipeline Company, L.L.C.	3/1/2021	Piedmont participated as part of a shipper group which filed post-hearing comments and	2021 Fuel Tracker	On 3/31/2021, the Commission issued an order accepting and suspending the revised tariff records, subject to refund, and establishing hearing procedures. Settlement proceedings reached an impasse, and a virtual hearing was held. Parties have submitted briefs and

			filed a motion opposing a late-filed intervention.		are awaiting an Initial Decision.
RP21-829-000	Coalition for Fair Fuel Rates v. Columbia Gulf Transmission, LLC	5/17/2021	Intervened on 6/14/21	Complaint and Request for Prospective Modification of Fuel Reimbursement Methodology to Conform to Commission Regulations and Policy	On 10/21/2021, the Commission issued an order denying the complaint. On 12/20/2021, the Commission denied the Coalition's request for rehearing. On 2/04/2022, the Commission issued an order addressing arguments on rehearing. The Commission disagreed with the Coalition's complaint finding that Columbia Gulf's pooling structure, postage stamp rate design, and fuel methodology, were not unjust, unreasonable, unduly discriminatory, and were otherwise consistent

					with other Commission policies and regulations.
RP21-904-000	Chief Oil & Gas LLC and Southern Company Services, Inc.	6/22/2021	Intervened on 7/06/21	Joint Petition for Limited Waiver of Capacity Release Regulations	On 8/20/2021, the Commission issued a letter order accepting the filing.
RP21-929-000	Texas Eastern Transmission, LP	6/30/2021	Intervened on 7/12/20221	Electric Power Cost and Surcharge Filing	On 7/20/2021, the Commission issued a letter order accepting the filing.
RP21-965-000	East Tennessee Natural Gas, LLC	7/14/2021	Intervened on 7/26/2021	Right of First Refusal Filing	On 8/04/2021, the Commission issued a letter order accepting the filing.
RP21-974-000	Transcontinental Gas Pipe Line Company, LLC	7/19/2021	Intervened on 8/02/2021	Revisions to Section 2.7 of Rate Schedule FT	On 8/20/2021, the Commission issued a letter order accepting the filing.

RP21-1001- 000	Texas Eastern Transmission, LP	7/30/2021	Intervened and Protested on 8/11/2021 Piedmont is participating in the rate case proceeding as part of an LDC customer group. The group has retained a consultant to represent the members' interests.	2021 Section 4 Rate Case	On 08/31/2021, the Commission issued an order rejecting TETCO's rate case filing. However, on rehearing of the 08/31/2021 order, the Commission accepted the rate case filing subject to TETCO removing certain income tax allowance tariff records. This proceeding was later consolidated with TETCO's refiled rate case filing in Docket No. RP21-1188. Settlement discussions are ongoing.
RP21-1078- 000	Transcontinental Gas Pipe Line Company, LLC	8/31/2021	Intervened on 9/13/2021	2021 Annual Charge Adjustment Tracker Filing – Rate Schedules GSS, LSS, SS-2 & S-2	On 9/14/2021, the Commission issued a letter order accepting the filing.

RP21-1157- 000	Tennessee Gas Pipeline Company, L.L.C.	9/28/2021	Intervened on 10/12/2021	Pipeline Safety and Greenhouse Gas Cost Adjustment Mechanism	On 10/20/2021, the Commission issued a letter order accepting the filing.
RP21-1159- 000	Eastern Gas Transmission and Storage, Inc.	9/29/2021	Intervened on 10/12/2021	2021 Annual Electric Power Cost Adjustment	On 10/22/2021, the Commission issued a letter order accepting the filing.
RP21-1160- 000	Eastern Gas Transmission and Storage, Inc.	9/29/2021	Intervened on 10/12/2021	2021 Annual Transportation Cost Rate Adjustment	On 12/10/2021, the Commission issued a letter order accepting the filing.
RP21-1171- 000	Transcontinental Gas Pipe Line Company, LLC	9/29/2021	Intervened on 10/12/2021	Annual Cash-Out Report	Proceeding is currently ongoing with multiple intervenors.
RP21-1187- 000	Eastern Gas Transmission and Storage, Inc.	9/30/2021	Intervened and Protested on 10/12/2021	2021 Section 4 Rate Case	On 10/29/2021, the Commission issued an order suspending, subject to refund, the tariff records and established hearing

FERC Filing Activity: April 1, 2021 – March 31, 2022

			Piedmont is participating in the rate case proceeding as part of an LDC customer group. The group has retained a consultant to represent the members'		procedures. Settlement discussions are ongoing.
RP21-1188-	Texas Eastern	9/30/2021	interests. Intervened	2021 Section 4 Rate Case	On 10/29/2021, the
000	Transmission, LP		and Protested on 10/12/2021		Commission issued an order suspending, subject to refund, the tariff records and establishing hearing
			Piedmont is participating		procedures. Settlement discussions are ongoing.
			in the rate		discussions are ongoing.
			proceeding as part of an		
			LDC		
			customer group. The		
		1	group has		

			retained a consultant to represent the members' interests.		
RP22-3-000	Midwestern Gas Transmission Company	10/1/2022	Intervened on 10/13/2021	2021 Annual Load Management Service Cost Reconciliation Adjustment	On 10/29/2021, the Commission issued a letter order accepting the filing.
RP22-13-000	Transcontinental Gas Pipe Line Company, LLC	10/1/2021	Intervened on 10/13/2021	Cash Out Surcharge Annual Update Filing	On 10/19/2021, the Commission issued a letter order accepting the filing.
RP22-25-000	Texas Eastern Transmission, LP	10/4/2021	Intervened on 10/18/2021	Cameron Extension Project In-Service Compliance Filing	On 10/27/2021, the Commission issued a letter order accepting the filing.
RP21-1143- 000	Transcontinental Gas Pipe Line Company, LLC	9/21/2021	Intervened on 10/21/2021 Filed protest with WSS Customer Group on 10/21/2021 Filed answer	Petition for Declaratory Order to Charge Market-Based Rates for the Washington Storage Field	Proceeding is currently ongoing with multiple intervenors.
			in opposition to motion for leave to answer with		

			WSS Customer Group on 11/23/2021		
CP21-498-000	Columbia Gas Transmission, LLC	9/21/2021	Intervened on 10/26/2021	Application for Certificate of Public Convenience and Necessity and Abandonment Authority – Virginia Electrification Project	Proceeding is currently ongoing with multiple intervenors.
RP22-84-000	Transcontinental Gas Pipe Line Company, LLC	10/26/2021	Intervened on 11/08/2021	Rate Schedules GSS, LSS & SS-2 Tracker Filing	On 11/16/2021, the Commission issued a letter order the filing.
RP22-94-000	Transcontinental Gas Pipe Line Company, LLC	10/28/2021	Intervened on 11/09/2021	2021 Annual Penalty Revenue Sharing Report	Proceeding is currently ongoing with multiple intervenors.
RP22-110-000	Columbia Gas Transmission, LLC	10/29/2021	Intervened on 11/10/2021	2021 Operational Transaction Rate Adjustment Winter Filing	On 11/17/2021, the Commission issued a letter order accepting the filing.
RP22-137-000	Transcontinental Gas Pipe Line Company, LLC	10/29/2021	Intervened on 11/10/2021	New Pooling Locations Filing	On 11/17/2021, the Commission issued a letter order the filing.
RP22-142-000	Texas Eastern Transmission, LP	10/29/2021	Intervened on 11/10/2021	Polychlorinated Biphenyls December 2021 Filing	On 11/22/2021, the Commission issued a letter order accepting the filing.

RP22-144-000	Midwestern Gas Transmission Company	10/29/2021	Intervened on 11/10/2021	2020 - 2021 Cash Out Report	Proceeding is currently ongoing with multiple intervenors.
RP22-135-000	Columbia Gulf Transmission, LLC	10/29/2021	Intervened on 11/10/2021	Capacity Allocation – Interruptions of Service	On 11/30/2021, the Commission issued an order accepting the filing.
RP22-149-000	Texas Eastern Transmission, LP	11/01/2021	Intervened on 11/15/2021	2021 Applicable Shrinkage Adjustment Filing	On 11/22/2021, the Commission issued a letter order accepting the filing.
RP21-525-000	Midwestern Gas Transmission Company	2/26/2021	Intervened protested on 3/10/2021 Filed Direct and Answering Testimony on 11/23/2021	2021 Section 4 Rate Case	On 5/03/2022, the Commission issued an order approving the Stipulation and Offer of Settlement resolving all issues in this proceeding.
RP22-339-000	Columbia Gas Transmission, LLC	11/23/2021	Intervened on 12/06/2021	Operational Transaction Rate Adjustment and Settlement Interim Rate Clarification	On 12/13/2021, the Commission issued a letter order accepting the filing.

RP22-363-000	Tennessee Gas Pipeline Company, L.L.C.	11/30/2021	Intervened on 12/13/2021	2020-2021 Cashout Report	Multiple motions to intervene filed. The proceeding is ongoing.
RP22-417-000	Tennessee Gas Pipeline Company, L.L.C.	12/15/2021	Intervened on 12/27/2021	Producer Certified Gas Pooling Service Option	On 4/29/2022, the Commission issued an order rejecting the filing.
RP22-433-000	Range Resources- Appalachia, LLC, and Columbia Gulf Transmission, LLC v. Texas Eastern Transmission, LP	12/21/2021	Intervened on 01/10/2022	Complaint	On 3/24/2022, the Commission issued an order dismissing the complaint and on 5/26/2022 the Commission issued an order denying rehearing on the complaint.
RP22-435-000	Range Resources – Appalachia, LLC v. Texas Eastern Transmission, LP	12/21/2021	Intervened on 1/10/2022	Complaint	On 3/24/2022, the Commission issued an order dismissing the complaint and on 5/26/2022 the Commission issued an order denying rehearing on the complaint. Note that this proceeding was consolidated with Docket No. RP22-433 above.

RP22-441-000	Transcontinental Gas Pipe Line Company, LLC	12/30/2021	Intervened on 1/13/2022	Cash Out Surcharge True-Up Filing	On 1/21/2022, the Commission issued a letter order accepting the filing.
RP22-540-000	Texas Eastern Transmission, LP	2/07/2022	Intervened on 02/14/2022	Interim Applicable Shrinkage Adjustment Compliance Filing	On 2/18/2022, the Commission issued a letter order accepting the filing.
RP22-539-000	Texas Eastern Transmission, LP	2/04/2022	Intervened on 02/14/2022	Ministerial Compliance Filing Pursuant to Docket No. RP21-1001-000	On 3/03/2022, the Commission issued a letter order accepting the filing.
RP22-633-001	Columbia Gas Transmission, LLC	3/08/2022	Intervened on 03/21/2022	2022 Retainage Adjustment Mechanism	On 3/24/2022, the Commission issued a letter order accepting the filing.

RP22-654-001	Columbia Gas Transmission, LLC	3/08/2022	Intervened on 03/21/2022	2022 Modernization Cost Recovery Mechanism Amendment Filing	On 3/24/2022, the Commission issued a letter order accepting in part, and rejecting in part, the filing.
RP22-689-000	East Tennessee Natural Gas, LLC; Sabal Trail Transmission, LLC; Saltville Gas Storage Company, L.L.C.; Southeast Supply Header, LLC; and Texas Eastern Transmission, LP	3/10/2022	Intervened on 03/22/2022	Request for Waivers – LINK System Maintenance	On 4/15/2022, the Commission issued a letter order granting the request for temporary waiver of certain North American Energy Standards Board Wholesale Gas Quadrant Version 3.2 Standards.

Exhibit___(JCP-7)

Piedmont Natural Gas Docket No. 2022-4-G Design Day Temperature Exhibit (JCP - 7)

DESIGN DAY WINTER 22-23

Calculated Weighted Average Temperature - 1/21/1985 - Carolinas

With 2022 Weights Across Weather Stations

High Temp	Low Temp	Avg Temp **	Weather Station	Weighting *	Weighted Avg
1	-12	-5.5	GEV	0.00519017	-0.0285459
21	-8	6.5	GSO	0.28176785	1.83149101
24	-5	9.5	CLT	0.31655771	3.00729828
23	-8	7.5	HKY	0.05747811	0.43108582
26	-4	11	GSP	0.17177196	1.88949159
16	-2	7	ECG	0.00924114	0.06468795
18	-1	8.5	POB	0.05350253	0.45477153
18	-1	8.5	GWW	0.08206497	0.69755226
27	5	16	ILM	0.02242556	0.35880891
			Weighted Avera	8.71	
* Using calcula	56.29				

^{**} Average of high and low temperatures

^{**}Verified with Weather Normal DDD that 1/21/85 was still the coldest